

Ventilatory Settings and Outcomes in OHCA patients



Protective ventilation strategies are commonly applied in patients after cardiac arrest. However, the optimal ventilatory settings in these patients and their association with patient outcomes remain unclear.

The goal of this study was to describe the ventilatory settings applied in the first 72 hours of mechanical ventilation in patients after out-of-hospital cardiac arrest (OHCA) and their association with six-month outcomes. This is the largest study describing ventilatory settings applied to OHCA survivors and their association with six-month mortality risk and functional outcomes.

Study researchers performed a sub-analysis of the Target Temperature Management-2 trial. The primary aim of the study was to describe the ventilator settings applied in patients admitted to the ICU after OHCA. The secondary aim was to assess the association between ventilator settings and six-month mortality and neurological outcomes.

One thousand eight hundred forty-eight patients were included in the study. The hypothesis was that in patients after OHCA and ventilated using lung-protective strategies, mechanical ventilator settings such as tidal volume, respiratory rate, plateau pressure, positive end-expiratory pressure, driving pressure, mechanical power, and ventilatory ratio are associated with patients outcomes.

The findings of the study show that 51% of patients were alive at six months, and 49% of patients died. The median tidal volume (V_T) was 7 mL per predicted body weight. Positive end-expiratory pressure (PEEP) was 7 cmH₂O, plateau pressure was 20 cmH₂O, driving pressure was 12 cmH₂O, mechanical power was 16.2 J/min, ventilatory ratio was 1.27, and respiratory rate was 17 breaths/minute. The median partial pressure of oxygen was 87 mmHg, and partial pressure of carbon dioxide was 40.5 mmHg. It was observed that respiratory rate, driving pressure, and mechanical power were independently associated with six-month mortality and poor neurological outcomes.

These findings show that ventilator settings in the first 72 hours after hospital admission, especially driving pressure and respiratory rate, may influence six-month outcomes in patients after cardiac arrest.

Source: [Intensive Care Medicine](#)

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